

REMARKS/ARGUMENTS

No amendments have been made to the current claims.

In the Office Action, Claim 3 was objected to under 35 U.S.C. §112 because it recites tripropylene glycol methyl ether. The claims required that all components of the claimed solvent blend have a vapor pressure less than 0.1 mm Hg at 20° C. The cited Heise et al. reference indicates that tripropylene glycol methyl ether has a vapor pressure of 0.4 millibars which according to the Examiner's calculation is equivalent to 0.3 mm Hg. The Heise et al. reference does indicate that the tripropylene glycol methyl ether is a vapor pressure of 0.4 millibars, but this is apparently a typographical error. The actual vapor pressure of tripropylene glycol methyl ether is 0.04 millibars or 0.03 mm Hg. This is established by two exhibits, which are attached. The first exhibit is a technical data sheet from Pearl Paints North America Inc. which indicates that the vapor pressure of tripropylene glycol methyl ether is 0.03 mm Hg. A second exhibit from Lyondell also indicates that the vapor pressure of tripropylene glycol methyl ether is 0.03. Accordingly, the Heise reference must be in error, and Applicant requests that the rejection of claim 3 under 35 U.S.C. §112 be withdrawn.

All pending claims were rejected under 35 U.S.C. §103 in light of the Heise et al. WO 95/09204. The Examiner has indicated that Heise et al. teaches an organic solvent blend that has a vapor pressure of at most 2.25 mm of Hg (approximately 22 times the maximum vapor pressure of the claimed solvent blend).

Applicant maintains that there is absolutely no way one of ordinary skill in the art would read the Heise et al. reference and arrive at Applicant's invention. Further, the Heise et al. reference directs one away from Applicant's invention.

Applicant's invention requires there to be a solvent blend with a petroleum distillate having a vapor pressure of less than .1 mm of Hg, 20 to 50% of glycol ether having a vapor pressure of less than .1 mm Hg and an ester having a vapor pressure of less than .1 mm Hg.

The Heise et al. reference simply fails to disclose this. None of the compositions that would be considered by the Examiner as a petroleum distillate is disclosed to have a vapor pressure of less than .1 mm Hg. Heise does not disclose a single petroleum distillate that has a vapor pressure that is even close to .1mm Hg. Most of the petroleum based products have a vapor pressure on the order of ten fold greater than .1 mm Hg. The two specific examples in Heise employ solvents having vapor pressures of 1.1 millibar and 1.5 millibar respectively. This is not even close to being acceptable.

The remaining materials in the examples 1 and 2 of Heise have vapor pressures of 1.5 millibars and 1 millibar respectively. (Applicant is working with the original rough translation forwarded by the Examiner, as no official translation is available.) With respect to the esters there is not a single ester disclosed which has a vapor pressure close to .1 mm Hg. The vapor pressures range from .5 millibars up to 4 millibars with most of the esters having a vapor pressure in the range from 1 to 2. There is simply no suggestion in this reference to select an ester that has a vapor pressure less than or equal to .1mm of Hg. Even several of the glycol ethers disclosed in Heise have excessively high vapor pressures and the tripropylene glycol methyl ether is listed improperly with an excessively high vapor pressure.

The Heise reference teaches 5 to 60% of the hydrocarbon and 40 to 95% of a further solvent selected from the group of esters, ketones, ether esters and ether alcohols. But, this does not teach at least 10% of a C₁-C₄ ester and 20 to 50% of a glycol ether. The relative percentages of the three components claimed by Applicant is not disclosed in the Heise reference. It is totally silent with respect to the relative concentrations of the ester and glycol ether.

There is no specific disclosure in the Heise reference indicating that the glycol ether should be combined with the ester. There is no suggestion for such a combination and no indication there would be any benefit from such combination.

Finally, the Heise reference discloses preferred components. Each of the preferred components have vapor pressures in excess of .1 mm of Hg. These range from 1 millibar up to 2.4 millibars. Thus, the reference clearly teaches away from the present invention. It is impossible to formulate Applicant's claimed product using the specific organic solvent, ester and glycol ethers disclosed in this reference.

Applicant's claimed composition is intended to dissolve grease. The composition of the present invention was tested and these test results are shown in examples 1, 2 and 3 of this specification. As shown in table 1 of example 1, the no VOC solvent of the present invention removed 94.39% of the grease in the test sample. The individual components of the blend removed anywhere from 48-69%. As a comparison Applicant tested d-Limonene which is a volatile organic solvent. This test data shows that the d-Limonene, a VOC, significantly out performs the individual low VOC solvents. Therefore, it would be expected that d-Limonene would significantly out perform the no VOC solvent blend of the present invention. However, the no VOC solvent blend out

performed the d-Limonene. Example 2 repeated this test and used three different no VOC solvent blends labeled A, B and C based on the ester utilized. All of these significantly out performed the individual components. It is an unexpected advantage that a non VOC solvent blend can significantly out perform each of the individual components. This is demonstrated by all of the examples.

Finally, example 3 was submitted to establish the relative performance of the present invention with three components compared to any combination of 2 out of the 3 components. This example showed that the 3 component blend out performed the 2 component blends. This is also a surprising result not suggested by the prior art. These results are not only surprising, they are synergistic.

Thus, if the Heise reference is properly the basis of an obviousness rejection, the unexpected advantages by the present invention support the patentability of the claimed invention.

In light of the above Applicant would request reconsideration of the outstanding Office Action and allowance of the pending claims.

Respectfully submitted,

WOOD, HERRON & EVANS, L.L.P.

By 

Gregory J. Lunn, Reg. No. 29,945

2700 Carew Tower
441 Vine Street
Cincinnati, OH 45202
(513) 241-2324 - Telephone
(513) 421-7269 - Facsimile